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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/500,635	03/30/2005	Jerzy Kuczynski	403125/WEINSTEIN	3011

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EXAMINER	
ZIMMERMAN, JOSHUA D	

ART UNIT	PAPER NUMBER
2854	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/500,635	KUCZYNSKI ET AL.	
	Examiner	Art Unit	
	JOSHUA D. ZIMMERMAN	2854	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 April 2008*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17 and 19-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17 and 19-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 1, 2, 5-13, 15-17 and 19-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuczynski et al. (FR 2803245) in view of Teng (US 6541183) and Applicants' Admitted Prior Art (AAPA). For simplicity, the corresponding US document of FR 2803245, US 2003/0054153, will be used for citations.

Regarding claims 1 and 2, Kuczynski et al. teach "a method for the producing a flexographic printing plate (title), which has a base layer and a layer of a light sensitive material attached to the base layer (figures 1-4), comprising producing an image on the layer of the light sensitive material by selective crosslinking (paragraphs 192 and 197), by insolating zones which are to be crosslinked with amplitude modulated laser light (paragraph 202), and sweeping the layer of the light sensitive material with the laser light to produce crosslinked zones (paragraphs 192 and 197), and, thereafter, removing zones which are not crosslinked (paragraphs 194, 195 and 2), said solid layer of light sensitive material having a thickness between 0.5 and 2 mm (paragraph 126) and including at least one photoinitiator sensitive to said laser light (paragraph 187 and 67)."

Kuczynski et al. fail to teach that the laser light has "a wavelength of 390 to 410 nm."

Teng teaches that violet laser diodes having a wavelength of "about 405nm" are preferred because they have lower cost (column 10, lines 43-51). Kuczynski et al. also fail to teach the use of "a bundle of diodes," as claimed in claim 2. Teng further teaches using a bundle of diodes in order to have a higher throughput (column 2, lines 35-40). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use a bundle of violet laser diodes in the method of Kuczynski et al. in order to have a lower cost method with higher throughput, as taught by Teng.

Kuczynski et al. also fail to teach that "the photoinitiator undergoes a photoreaction under effect of said laser light to bleach the layer of light sensitive material, wherein the bleaching renders the crosslinked zones transparent to said laser light in order to enable cross-linking throughout the thickness of the layer of light sensitive material." However, Teng further teaches using a corresponding initiating system for the selected wavelength of light (column 5, lines 52-67).

AAPA discloses a number of photoinitiators sensitive to the wavelength of light used that were commercially available at the time of the invention (first paragraph of page 3), and further teach that all of the listed photoinitiators inherently "undergo a photoreaction under effect of said laser light to bleach the layer of light sensitive material, wherein the bleaching renders the crosslinked zones transparent to said laser light in order to enable cross-linking throughout the thickness of the layer of light sensitive material (applicants' admission in the third paragraph of page 8 of applicants' reply dated 04/16/08, and in the amendment to the specification of the same date)."

Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use any of the commercially available photoinitiators disclosed by AAPA in the modified method of Kuczynski et al. in order to have a light sensitive layer that is sensitive to the wavelength of light being used to expose said layer, as taught by Teng.

Regarding claim 5, Kuczynski et al. further teach "wherein the light sensitive material contains at least one selected from the group consisting of high molecular weight polymers, functionalized monomers or oligomers, photo-initiators, reactive or non-reactive diluents, inhibitors and protective agents, and pigments (paragraph 123)."

Regarding claim 6, Kuczynski et al. further teach a crosslinking system for flexographic printing plates comprising two complementary systems "the light sensitive material is a photo-polymer containing at least two complementary crosslinking systems (paragraphs 62-64)."

Regarding claim 7, Kuczynski et al. further teach "wherein a main system is used to create an image (paragraph 64)." In this paragraph, examiner interprets the 'main system' as the imaging system, and the 'complementary system" as the system which modifies the compressibility.

Regarding claim 8, Kuczynski et al. further teach "including using a complementary system to complete the crosslinking and to increase chemical and mechanical resistance (paragraphs 62-63 and paragraph 144)."

Regarding claim 9, Kuczynski et al. further teach "including using a complementary system to generate different compressibilities (paragraph 64)."

Regarding claim 10, Kuczynski et al. further teach "including partially crosslinking the photo-polymer to adjust viscosity and prevent cold creep during prolonged storage periods or transport (paragraph 62)." Examiner notes here that creating or destroying other bonds inherently adjusts the viscosity.

Regarding claim 11, Kuczynski et al. further teach "including sensitizing the photo-polymer with a flash of light before writing an image with the laser light (paragraph 70)."

Regarding claim 12, even though Kuczynski et al. as modified do not specifically disclose that "the light sensitive material is a polymer with hardness between 60 and 70ShA," the structure and process by which it is made are identical to that of the instant claims. As a result, since the polymer in the modified method of Kuczynski et al. is identical to the claimed polymer, the claimed hardness property is met by the polymer of Kuczynski et al. See MPEP 2112.01.

Regarding claim 13, Teng further teaches "insolating the light sensitive material with an energy in a range from 20 to 1000 mJ/cm^2. (column 10, lines 50-54)."

Regarding claim 15, the array of diodes taught by Teng operate "in parallel."

Regarding claim 16, Kuczynski et al. further disclose "comprising tubular sleeve on a rigid support having a composite base and, attached on the base, the solid polymer layer of light sensitive material (paragraphs 24 and 85)."

Regarding claim 17, Kuczynski et al. further disclose "wherein the composite base has a thickness in a range from 0.2 to 40 mm (paragraph 99)."

Regarding claim 19, Kuczynski et al. further disclose "wherein the sleeve includes a compressible layer (paragraph 24)."

Regarding claim 20, Kuczynski et al. further disclose "including a second sleeve containing an inserted layer for variation of thickness of the sleeve (paragraph 127)."

Regarding claim 21, Kuczynski et al. further disclose "wherein the inserted layer is compressible (paragraph 170. The compounds used here are indeed compressible)."

Regarding claim 22, Kuczynski et al. further disclose "wherein the tubular sleeve is extruded (paragraphs 91-92)."

Regarding claim 23, Kuczynski et al. further disclose "wherein the tubular sleeve is produced by rolling and attachment of a plate to a support cylinder or sleeve (paragraphs 84-86)."

Regarding claim 24, the recited method of creating the flexographic printing plate does not define over the modified structure of AAPA.

Regarding claim 25, Kuczynski et al. further disclose "wherein the rigid support includes a base made of polyester film (paragraphs 85, 86, 2, and 3)."

Regarding claim 26, Kuczynski et al. further disclose "including a plurality of the layers of light sensitive material (paragraph 170)."

Regarding claim 27, Kuczynski et al. further teach that the "flexographic printing plate is etchable with one of water, an aqueous solution under pressure, high temperature, and brushing (paragraphs 2 and 168)."

Regarding claim 28, Kuczynski et al. teach "a method for producing a flexographic printing plate (title), which has a base layer and a solid layer of a light sensitive material attached to the base layer (figures 1-4), comprising producing an image on the layer of the light sensitive material by selective crosslinking (paragraphs 192 and 197), by insolating zones which are to be crosslinked with amplitude modulated laser light (paragraph 202), and sweeping the layer of the light sensitive material with the laser light to produce crosslinked zones (paragraphs 192 and 197), and, thereafter, removing zones which are not crosslinked (paragraphs 194, 195 and 2), said solid layer of light sensitive material having a thickness between 0.5 and 2 mm (paragraph 126) and including at least one material selected from the group consisting of high molecular weight polymers, functionalized monomers or oligomers (paragraph 123) and at least one photoinitiator (paragraph 187 and 67), wherein the photoinitiator is sensitive to said laser light (paragraph 187 and 67)."

Kuczynski et al. fail to teach that the laser light has "a wavelength of 390 to 410 nm."

Teng teaches that violet laser diodes having a wavelength of "about 405nm" are preferred because they have lower cost (column 10, lines 43-51). Teng further teaches using a bundle of diodes in order to have a higher throughput (column 2, lines 35-40). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use a bundle of violet laser diodes in the method of Kuczynski et al. in order to have a lower cost method with higher throughput, as taught by Teng.

Kuczynski et al. also fail to teach that "the photoinitiator undergoes a photoreaction under effect of said laser light to bleach the layer of light sensitive material, wherein the bleaching renders the crosslinked zones transparent to said laser light in order to enable cross-linking throughout the thickness of the layer of light sensitive material." However, Teng further teaches using a corresponding initiating system for the selected wavelength of light (column 5, lines 52-67).

AAPA discloses a number of photoinitiators sensitive to the wavelength of light used that were commercially available at the time of the invention (first paragraph of page 3), and further teach that all of the listed photoinitiators inherently "undergo a photoreaction under effect of said laser light to bleach the layer of light sensitive material, wherein the bleaching renders the crosslinked zones transparent to said laser light in order to enable cross-linking throughout the thickness of the layer of light sensitive material (applicants' admission in the third paragraph of page 8 of applicants' reply dated 04/16/08, and in the amendment to the specification of the same date)."

Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use any of the commercially available photoinitiators disclosed by AAPA in the modified method of Kuczynski et al. in order to have a light sensitive layer that is sensitive to the wavelength of light being used to expose said layer, as taught by Teng.

Regarding claim 29, Kuczynski et al. further disclose "comprising tubular sleeve on a rigid support having a composite base and, attached on the base, the solid

polymer layer of light sensitive material (paragraphs 24 and 85)."

2. Claims 3 and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kuczynski et al., Teng and AAPA, as applied to claim 1 above, further in view of Cohen et al. (US 3264103).

Regarding claim 3, Kuczynski et al. as modified fail to teach that the non-crosslinked zones are removed "by liquefying the zones which are not crosslinked thermally, without using solvents." However, Cohen et al. teach such a method (column 1, lines 67-72) in order to avoid using toxic chemicals (column 1, lines 30-33). Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use the dry process of Cohen et al. in the modified method of Kuczynski et al. in order to avoid using toxic chemicals.

Regarding claim 4, Cohen et al. further teach "wherein the light sensitive material not crosslinked by the laser light has a variation in viscosity in a temperature range from 60 to 140°C., and the zones that are crosslinked melt at a temperature higher than the temperature range (column 1, line 55-72).

3. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kuczynski et al., AAPA and Teng, as applied to claim 1 above, further in view of Robinson et al. (US 5795647).

Regarding claim 14, Kuczynski et al. as modified fail to teach that the sleeve could be produced by "thermally projecting pre-formulated powders onto a support

sleeve to produce the sleeve." However, one having ordinary skill in the art would recognize that powder coating and extrusion coating methods are both recognized as equivalent methods of applying polymers. Further, column 2, lines 15-18 of Robinson et al., teach the same. Therefore, at the time of the invention, it would have been obvious to one having ordinary skill in the art to use either method in order to easily and properly apply the polymers for the flexographic printing plate.

Response to Arguments

4. Applicants' arguments filed 04/16/08 with respect to the previous combination of references have been considered but are moot in view of the new ground(s) of rejection.

5. Applicants' arguments regarding Teng have been fully considered but they are not persuasive.

Applicants' argument that Teng is concerned only with very thin layers which are different than those found in flexographic systems is irrelevant. It is the teaching of Teng to use specific laser wavelengths and specific laser systems in order to save money which is applied in the rejections above. The exposure device and system for exposing photopolymers disclosed by Teng is clearly relevant and applicable to flexographic layers.

In response to applicants' argument that Teng is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention.

See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Teng deals with an exposure device for exposing photopolymers, which is clearly relevant to applicants' endeavor.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOSHUA D. ZIMMERMAN whose telephone number is (571)272-2749. The examiner can normally be reached on M-R 8:30A - 6:00P, Alternate Fridays 8:30A-5:00P.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on 571-272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Judy Nguyen/
Supervisory Patent Examiner, Art Unit 2854

Joshua D Zimmerman
Examiner
Art Unit 2854

jdz